

Abstract of the Disclosure

THREE WAY VALVE AND ELECTRO-HYDRAULIC ACTUATOR USING  
SAME

The present invention relates to high speed control valves which are especially applicable for use in fuel injection systems. Producing a valve with a quick response time within acceptable packaging constraints and with a structure that allows the valve to be mass produced with consistent performance between valves is extremely problematic. By moving flow restrictions within the valve away from the valve seats, flow forces on the valve member can be reduced, while possibly also permitting a reduction in the necessary travel distance of the valve member to improve response time and other performance characteristics. The valve is particularly applicable in controlling hydraulic pressure applied to the closing hydraulic surface of a direct control needle valve in a fuel injector.